FY 2004
PROGRAM ELEMENT EVALUATION REPORT

OF THE

GROWING AREA CLASSIFICATION ELEMENT
SHELLFISH SANITATION PROGRAM
DEPARTMENT OF MARINE RESOURCES
STATE OF MAINE

PREPARED BY

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ON

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PROGRAM ELEMENT EVALUATION REPORT

STATE: Maine

DATES OF EVALUATION: May 3 - 7, 2004 and June 14 -18, 2004

PROGRAM ELEMENT EVALUATED: Growing Area Classification

A. Status of Deficiencies from Last Program Evaluation

The FY 2003 evaluation of the Maine Department of Marine Resources (DMR) Growing Area Program found that the DMR was in non-compliance with five (5) items found in the National Shellfish Sanitation Program (NSSP) Model Ordinance (MO). The Growing Area Program was also provided with twelve (12) recommendations cited to help the state strengthen its program. The non-conformities and recommendations were addressed in the state's response to the PEER dated January 5, 2004.

Below are the non-conformities and recommendations noted in the FY 2003 evaluation followed by the states response to each of the items:

Non-conformities:

1. *During the review of the Sanitary Surveys it was noted that a standard statement was found in the meteorological characteristic's section which addressed winds. The statement implied that [after a data review] there was no indication that winds had direct adverse affect on the growing area. Further review of the field data sheets and the field data sheet database revealed that any potential influence of wind on the growing area was not being documented or even considered. As part of the requirements specified in Chapter IV@.01.A(1)(c) the affects of wind on the growing area should be documented and evaluated as part of the written Sanitary Survey report.*

   The growing area staff have begun using data from the NOAA weather buoys to determine the effects of wind on the growing area. Documentation and evaluation of the effects of prevailing winds on the growing area will be part of the Sanitary Survey reports written from this date forward.

2. *During the review of the Sanitary Surveys it was noted that data analysis and interpretations required under Chapter IV@.01.A(1)(d) are either lacking substance or are missing from the reports. Each hydrodynamic and meteorological factor that could have adverse affects on the growing area should be analyzed and discussions relating to that analysis should be added to the survey report. These discussions would include, but are not limited to, water quality changes, reasons for any change and a trend analysis on the individual factors. The trend analysis should also describe how the factors relate to, or may affect, each other and if combined, how the factors create an adverse situation and to what extent.*

Staff are now fully aware of the requirements and what elements of the sanitary survey report are needed. We are currently working on a template to use, which will prompt staff to consider and analyze these elements. We have also instituted an internal PEER review standard operating procedure (SOP), which will further strengthen and promote consistency with reports generated by the DMR. The template should be completed on or by February 2004. A draft of the first sanitary survey will be shared with the FDA Regional Shellfish Specialist for review.

3. *During the review of the Sanitary Surveys it was noted that the Sanitary Survey conclusions necessary to illustrate the proper growing area classification, as required in Chapter IV@.01.A(1)(e) are very brief and nondescript. This section should routinely include recommendations for further work, any changes in monitoring strategy, the addition/ deletion of water quality stations (along with rationale) and a detailed description of the new growing area classification.*

   See status remarks from non-conformity #2.

4. *During the review of the Sanitary Surveys it was noted that the computer generated maps used to provide a visual description of the shellfish management areas do not depict an upland boundary. A distinct boundary through the upland topography would allow for a more clear determination to where pollution may be impacting shellfish waters; and for adjoining growing areas, which water body may be affected by the particular pollution source. [Chapter IV@.01.D(2)(a)]*

   Computer generated maps are being used in most aspects of the shellfish program. Several meetings have taken place to determine the feasibility of updating and cross-referencing shellfish growing areas, patrol areas, water quality sampling stations, pollution sources and harvester information. During our research it was determined that the Maine GIS system does have a data layer which contains the upland boundaries at predetermined distances of 1000', 2000' and 3000', et. al. from the high tide line. We will continue to work with the marine patrol on the risk classification portion and finish adding the upland boundaries to the growing area maps.

5. *During a review of the Shoreline Survey Database it was noted that the pollution sources were not identified as being either direct or indirect. Chapter IV@.01.D(2)(d)(ii) requires the Authority to determine at a minimum if the pollution source has a direct or indirect impact on shellfish waters.*

   We have added a direct and indirect field to the shoreline survey/stream database. We have also developed definitions of pollution sources to use program wide.

Recommendations:

1. *FDA recommends that the DMR obtain Global Positioning System (GPS) coordinates for all fixed points referenced on all computer generated (ArcView ™) maps. Actual coordinates generated in the field are more defendable in court and maintain the quality*

of information within the mapping database. Items to GPS would include but are not limited to: Sample stations, point source outfalls and closure line endpoints or changes in closure line direction.

Two handheld GPS units were purchased for each office. Training was held in September 2003, which included how to take and store waypoints. The second stage of the training, currently being completed, includes the downloading of the stored waypoints to the computer. DMR Specialist Fendl created an Excel™ spreadsheet of all fixed water sampling station points pulled from a GIS layer. Staff are using this spreadsheet and ground-truthing the points with the handheld units.

All field staff are using the handheld GPS units to fix points during shoreline survey work and fixed points are being utilized in legal notices for both bacterial and biotoxin closures. It is anticipated that more handheld GPS units will be purchased in the near future so that all specialists will have units in their vehicles at all times.

2. *FDA recommends that the DMR expand the discussion on the four standard Hydrographic and Meteorological Characteristics by including more detail as to how each may affect the particular growing area. The Summary discussion section should include an assessment as to how the four different characteristics relate to each other and if adverse conditions are created when two or more characteristics happen simultaneously.*

   The DMR management has also developed a draft SOP for document PEER reviews. The SOP describes the procedure for developing, formatting, approving and distributing document within the Public Health Division. This will promote consistency and improve the quality of reports division wide (not just shellfish related documents.) The SOP includes templates for each type of report; i.e. Sanitary Survey, Triennial Reviews and Annual Updates.

   Additionally, Mercuria Cumbo is working to develop a statistical analysis to determine what effect tide stage has on water quality. Mercuria will develop a training course for the growing area staff so that each staff member will be able to use this procedure to perform detailed data analysis and compare many different variables including tidal stage, rainfall and wind.

3. *FDA recommends that the DMR create a procedure for documenting the creation, deletion or modification of water quality sample stations. Items to document would include but are not limited to: Station type, designation (number), Lat/Long (coordinates), description (location), justification for action taken and approval. Such documentation would be reviewed with the growing areas Sanitary Survey.*

   The DMR have developed a procedure and a form for documenting the creation, deletion or modification of water quality sample stations. Items included on the document: station type, designation, Lat/Long, description, justification for action taken and approval. Prior

to this form, no formal documentation was maintained which resulted in valuable historical information to be lost.

4. *FDA recommends that the DMR establish a procedure for reports to be subjected to an internal Peer Review process. It is important that the report writers not become complacent with their work. A peer review process will allow an independent third party to review the written work before it becomes final and offer suggestions for improvement.*

   Please see course of action for Recommendation #2.

5. *FDA recommends that the DMR include a title page with all Sanitary Surveys. The title page would include the name of the author(s), the name of the person conducting the peer review, and the signature of the most responsible program official signifying that the report is now final and in effect.*

   Please see course of action for Recommendation #2.

6. *FDA recommends that the DMR create a template for Sanitary Surveys. The template would encourage program wide consistency between growing area staff. This approach will also streamline some language which will remain constant from one report to the next. It will also ensure that all required sections of the Sanitary Survey are included and thoroughly discussed.*

   Please see course of action for Recommendation #2.

7. *FDA recommends that the DMR utilize a Bibliography Page as part of the Sanitary Surveys. The bibliography page should identify the source of all factual statements. The page should also be used to identify any organizations, state agencies or non-profit groups who generate and/or provide essential information that is incorporated into the overall assessment of the shellfish management areas.*

   Please see course of action for Recommendation #2.

8. *FDA recommends that the DMR create a SOP for conducting shoreline surveys and for managing the information. The SOP should require a detailed schedule outlining upcoming completion dates to ensure that growing areas are not closed unnecessarily due to incomplete shoreline assessments. Upon completion of the shoreline survey, a summation should be completed which documents relevant findings, courses of action, referrals to other state agencies for remediation [Chapter IV@.01.A(4)] and any other comments describing conditions that directly affect growing area classification.*

   A shoreline survey schedule is being developed. Staff have started writing summations to describe relevant findings, courses of action and any referrals to other state agencies for remediation, et. al.

9. *FDA recommends that the DMR obtain measurements used as part of the assessment process in the most precise manner possible. Stream flow volume (cfs), station location (GPS), and distance (point A to point B) should have actual values whenever practical and estimations should be used only when absolutely necessary. [Chapter IV@.01.D.(1)(b)]*

   The DMR growing area staff members have access to current meters, handheld GPS units and rangefinders in order to document actual values. Training on the use of the current meters was provided in March 2004. Final training on the downloading of GPS waypoints will be completed as described in the proposed course of action for Recommendation #1.

10. *FDA recommends that the DMR establish a problem-solving chain of command. This chain of command structure along with regularly scheduled staff meetings will provide staff members with an opportunity to discuss pressing issues of the day, comment on schedules and prioritize deadlines. The outward sharing of information will assist with creating a consistent atmosphere for industry members and external customers who wish to be treated similarly throughout the state.*

    Before the PEER review, staff meetings were held sporadically. Since the review, we have instituted regularly scheduled monthly staff meetings between the two regional offices; complete with minutes and sub-committee assignments and deliverables. Staff meetings within each office are conducted informally as field schedules permit to discuss daily/weekly issues. The DMR management has also developed a draft SOP for document peer reviews, which includes a chain of command.

11. *FDA recommends that the DMR create a SOP for stream sampling (pollution source sampling). The SOP should define Actual versus Potential pollution sources; and define Direct versus Indirect pollution sources. The SOP should outline a sampling protocol which describes minimum requirements (i.e. 2 dry weather and 2 wet weather samples to be collected to assess potential impact on the shellfish growing area).*

    A SOP for stream sampling was developed and submitted February 2004 to the FDA Regional Shellfish Specialist.

12. *FDA recommends that the DMR create a template for Conditional Area Management Plans. A basic outline format with standard language for each of the management plans used in Maine should be available to staff members to ensure consistency. The four plans include: Rainfall, Wastewater Treatment Plant, Marina and Seasonal. The template should detail how the plans are implemented, how shellfish areas are opened and closed, and who is responsible at each step in the process to encourage accountability.*

    Please see course of action for Recommendation #2.

B. Total Number and Identification of Growing Areas Evaluated

The Maine Department of Marine Resources monitors 45 separate Shellfish Management Areas. Twelve of the Shellfish areas were selected to be evaluated. The number of evaluations is based upon a representative sampling plan designed to provide a 95 percent probability of detecting a 20 percent or greater defect level. The selection of the 12 growing areas was performed by Peter Koufopoulos, the Northeast Regional Shellfish Specialist. Mr. Koufopoulos utilized the Excel database program and performed a random number query. The selected growing areas are listed below.

Shellfish Management Areas

West - Boothbay Harbor Office		East - Lamoine State Park Office	
WB	-York	ED	-Isle au Haut
WJ	-Freeport/Brunswick/Harpswell	EE	-Swans Island-Frenchboro, Long Island
WQ	-Damariscotta River	EH	-Bass Harbor to Great Head, Bar Harbor
WR	-Johns Bay	EN	-South Addison to Jonesport
WW	-Owls Head to Cape Jellison	ER	-Machiasport to Cutler
WY	-Isleboro	EU	-Shackford Head, Eastport to Calais

C. State Program Areas in Compliance and Program Areas Evaluated

The Maine DMR follows the NSSP Model Ordinance (MO) regarding the completion timeframes for all required reports. Currently the staff are required to complete the Sanitary Surveys every 12 years, the Triennial Reports every 3 years and the Annual Updates every year. Internal DMR policy states that all reports are to be formatted to meet the requirements of the MO. All Annual Updates are completed by February 28th each year for the previous calendar year. Conditional area management plans are re-evaluated on an annual basis. Information gathered from the management plan review is included in the Annual Update and used to support the current classification.

All conditionally managed areas that were reviewed during this evaluation period were closed according to the criteria established in the Conditional Area Management Plan. DMR also closes Approved waters during emergency conditions, typically heavy rainfall events. The DMR staff receive great pressure from the commercial shellfish harvesters to reopen closed areas as soon as possible. In lieu of shellfish tissue sampling, areas closed due to management plan violations are normally closed for a minimum of fourteen days after the event. In order to be more responsive to the harvesters demand, the DMR have decided to incur the additional expense of sampling both shellfish growing waters and shellfish tissues in an attempt to open the shellfish harvesting areas more quickly whenever possible and appropriate. A closed area will reopen only after acceptable water samples and/or shellfish tissue results are received and evaluated. The affected

area will reopen when the fourteen-day period has elapsed or when tissue and water samples have demonstrated that contaminants have been reduced. This sampling also supplements ongoing studies to document relationships between fecal coliform bacteria levels in the water and fecal coliform bacteria levels in the surrounding shellfish. Any correlation made could reduce the effort of future sampling and also allow the fourteen-day cleansing period to be shortened.

1. Sanitary Survey - General

   Written Sanitary Survey reports were present and completed for all 12 management areas that were reviewed. DMR generally follows the format described in the NSSP MO Guidance Document A.3. During discussions with staff members it was noted that the current survey format is being revised to follow more closely the suggested outline in the MO. It was noted during the 2003 PEER that the Hydrographic and Meteorological section, and the concluding subsections throughout the report, were sparse and devoid of strong information upon which to make decisions regarding proper classification. Those sections are being expanded and the level of detail has increased.

2. Sanitary Survey - Required

   Sanitary Surveys are completed on all Shellfish Management Areas prior to the harvest of shellstock for human consumption. A Sanitary Survey along with its associated shoreline survey is used to properly classify an area as Approved, Conditionally Approved, Restricted, Conditionally Restricted or Prohibited.

3. Sanitary Survey - Performance

   The DMR schedule Sanitary Surveys to be completed once every 12 years for each Shellfish Management Area. The DMR stager the triennial reviews so they may be completed in a timely fashion, once every three years. The water quality staff recognizes that if a Sanitary Survey or a Triennial Review is not completed within the specified time frames then the Shellfish Management Area shall be placed in the closed status pending completion of the reports.

   Per DMR internal guidelines, the Annual Updates are complete by February 28 for the previous calendar year. It was noted during the evaluation that some of the Annual Updates had not been completed within the specified timeframe. Annual Updates require staff to review important performance standards, sampling data and pollution source information to determine if a downward trend in water quality is occurring. It is vital that these assessments are completed in a timely fashion each year.

   The Annual Updates were the focus of the FY 2004 program evaluation. The Annual Updates were thoroughly reviewed; this included the update's formatting, factual contents and concluding statements (assessments and recommendations). For many years the Updates have consisted of a fill-in-the-blank table which prompted the water quality

specialists for information by posing certain questions within the table. Unfortunately the table has not been updated in some time. The questions within the table have become irrelevant or are simply nondescript. Some of the information currently required by the MO is not compiled through the use of this table. It should be noted that during the interview process the specialists provided all required information from memory. It was then recommended that the specialist attempt to document in writing the personal knowledge each of them possess on their respective shellfish growing areas. This recommendation was provided to both strengthen the information found within the central files and ensures that vital information is not lost nor forgotten.

Domestic/Industrial/Agriculture Wastes

Many of the 45 Shellfish Management Areas have Wastewater Treatment Plants that discharge directly into shellfish waters; or the plants affect the growing area by discharging into rivers which drain into the growing areas. DMR has placed buffer zones around all of the discharges located in the coastal zone. Many of the treatment plant outfalls have completed hydrographic studies. Outfalls waiting for these studies to be completed have buffer zones based on mathematical calculations using worst case situations and untreated or partially treated sewage.

There are very few industrial discharges along the coast of Maine. Most of them are located in heavily populated areas that have an existing closure due to other influences. Agricultural runoff is not a problem for many growing areas along the coast. The bold rocky coast of Maine is not conducive for large amounts of livestock. There are vast blueberry fields near the coastal waters, however stream sampling has not shown their overland runoff to pose a problem to the surrounding water.

Domestic Waste - Individual Sewage Disposal Systems

As is often the case in coastal Maine, the subsurface soil composition is not always adequate for establishing proper leach fields. Consequently the majority of the recently installed septic systems are designed to have raised bed leach fields. Prior to the use of this more modern sewage disposal system, the coastal area of Maine relied on a system known as an Overboard Discharge (OBD). The Maine Department of Environmental Protection (DEP) currently licenses, regulates, and inspects these OBDs which are approved sewage treatment systems consisting of a sand filter or mechanical treatment system and a chlorine disinfection unit used to treat discharges of sanitary waste from residential and commercial facilities. The chlorinated waste is discharged through a pipe extending to below the low tide mark. OBDs have been regulated in Maine since the late 1970s when direct discharges of untreated wastes were banned. New OBDs are prohibited by law however, existing systems that remain licensed and inspected may continue to be used until the owner is offered a grant from the Maine Overboard Discharge Program administered by the DEP. The program offers money to replace the OBD with a traditional septic system; or find and/or design an alternative system that can be installed. The Maine Overboard Discharge Program awards grants based upon a

priority system. OBDs located in the most productive shellfish habitats are the highest priority for removal.

Existing OBD outfalls do have a prohibited closure zone placed around the end of the pipe. The size of the closure zone is based on calculations generated from the permit information. The water depth (for dilution, including viral), permitted flow rate and the average fecal coliform concentration for a chlorinated system of this type, are all factors used to establish a buffer zone to protect public health.

Drainage Ditches - Stormwater Runoff

Stormwater runoff from drainage ditches, creeks and streams are considered to have the largest impact on water quality in the growing areas of Maine. Stormwater transports pollutants, including fecal coliform bacteria, from many of the indirect pollution sources in the drainage basin, to the growing area. The impact of these outfalls is evaluated by strategically placing sampling stations in these ditches, creeks and streams and also at their confluence with the growing area.

As with many indirect sources of pollution, the overall impact from these specified drainage-ways on the growing area is only known through the review of long-term historical data. Most of the data centers on heavy rainfall events. This is due to the fact that these drainage-ways, which may be dry most of the year, will begin to flow, becoming a conduit for potential pollution to reach the viable shellfish areas. Actual flow rates are now being collected and are used to generate fecal loading calculations.

Wildlife/Domestic Animals

General descriptions of migratory waterfowl and typical populations of other regional wildlife are included in the shoreline survey reports. Regional wildlife populations are considered significant contributors to the fecal coliform levels in the growing areas during rain events within the local drainage basin. Migratory waterfowl are contributors also; however, the overall impact of wildlife, in general, is ultimately unknown.

Domestic animals within the management areas are typically dogs and cats. Few homes have horses and fewer still have other barnyard type animals as domesticated pets.

Marinas

All marinas within close proximity to Approved shellfish harvesting waters were evaluated as the focus of the FY 2002 Growing Area Program Evaluation. The evaluation noted that the marina community within Maine will only operate part of the year due to adverse regional weather. The operating procedures the marinas have in place provide an excellent opportunity for the shellfish growing waters to be accessible, at least part of the year, to direct market harvest through the use of conditional management plans.

The closure zones were created by the state using volumetric calculations and re-verified during the evaluation. The basic formulas used were found in FDA guidance issued in June 1989, which describes the proper procedure when establishing a precautionary closure zone around a marina for the purpose of protecting public health.

Radionuclides/Metals

There were no known sources of radionuclides or heavy metals impacting any of the growing areas evaluated. There is some metals data in the central files for those growing areas near industrial or more heavily populated areas. General statements to this effect are made in each of the growing area reports.

Vibrio Species

The State of Maine has not been the original source of shellfish associated with any *Vibrio vulnificus (V.v.)* illness in the past three years. Maine was the possible source of one *Vibrio parahaemolyticus (V.p.)* illness. A thirty-year-old female consumed soft shell clams as an appetizer, along with a broiled seafood platter as the main course, on July 3, 2002 with an illness onset on July 5, 2002. The suspect clams were harvested from the Sheepscot River in Maine. No other Vibrio species illnesses have been documented as a result of individuals consuming shellstock from the waters of Maine. The DMR currently operates under Time-Temperature Matrix Option 3 - Level 2 year round.

Marine Biotoxin Evaluation

The DMR has developed a marine biotoxin contingency plan for all marine and estuarine shellfish growing areas. The blue mussel, *Mytilus edulis*, is used as the indicator species when monitoring for paralytic shellfish poisoning (PSP). PSP levels in mussels usually become toxic two weeks before soft-shelled clams, *Mya arenaria*. Mussels are sampled weekly from April through October along the entire coast. Additional samples are collected as conditions dictate, whether to further delineate a closure or simply assess an area that has experienced a slight rise in PSP concentrations.

Maine adheres to the PSP international toxic level standard of 80 micrograms per 100 g of edible portion of shellfish. Current state law allows the DMR to immediately close any area that contains toxins or contaminants known to be a public threat. This type of emergency closure effectively revokes all shellfish licenses; it also grants authority to embargo, confiscate and destroy contaminated or potentially contaminated shellfish.

When a closure is deemed necessary, biotoxin monitoring staff members will notify the state's shellfish program director. The director will then contact the marine patrol division offices and alert them to the closure. The marine patrol units will work in concert with the director's office in issuing notices to the general public through newspaper releases, by contacting local government authorities and posting notifications

in highly visible public places. The patrol officers will then conduct intense patrols of the affected harvesting areas by water and from land.

The DMR has established policy to assist in the coordination of a contaminated shellfish product recall. DMR requires the certified dealer to contact the receiving state's control authority and provide all pertinent recall and tagging information. The dealer will request the suspect product to be destroyed or returned to the state of origin for further assessment.

The DMR is in close contact with the Canadian shellfish authorities and other state officials along the eastern seaboard. Information regarding increased toxicity in a growing area and changes in phytoplankton populations is shared and analyzed. Collaboration by the DMR and the University of Maine has resulted in the creation of a volunteer-based phytoplankton monitoring program. There are 25 groups statewide who report weekly to the DMR on their findings from plankton tows performed at stations assigned by the DMR.

4. Shoreline Survey

All potential and actual pollution sources have been evaluated by the DMR and documented in the initial Sanitary Survey Reports. Pollution source information is constantly updated throughout the year by both boat and vehicle. The pollution source information gathered throughout the year is then incorporated into the next appropriate report.

The Shellfish Management Areas within Maine are quite large. The water quality staff members have been forced to break areas into smaller, more manageable sized areas when conducting any shoreline survey reconnaissance. As a result, it may take several years for the pollution source assessment along the entire growing area shoreline to be completed.

The shoreline survey database is set up to be very comprehensive. The eastern-half of the state routinely updates the shoreline database from their field data sheets. It was noted that only a portion of the western-half of the state's shoreline survey information has been entered into the computer. Currently hardcopies of their shoreline data must be reviewed to determine if correlations exist between water quality and identified pollution source locations.

D. State Program Deficiencies

No administrative deficiencies were cited during the FY 2004 program evaluation per Chapter IV of the NSSP MO. No deficiencies related to the shoreline survey activities or the shoreline survey database were also noted.

E. Recommendations

FDA recommends that the DMR provide a stand-alone narrative section as part of the Annual Update. The narrative should include overall discussions on such topics as: sample data review, pollution source changes and conditional area management plan compliance. The narrative should also include concluding remarks which reference classification changes, future or on-going survey work in the area and any other appropriate recommendations based on the totality of the facts provided within the Annual Update. The narrative should also be subjected to the internal peer review process.

FDA recommends that the DMR provide detailed Conditional Area Management Plans. The plans should describe step by step how a conditional area is closed and then subsequently reopened. The plan should illustrate how proper implementation will be performed, to include contact information, compliance criteria and a complete list of activities to be performed.

FDA recommends that the DMR review all closure lines as they correspond to the location of active sample stations. During the evaluation it was noted through file review and field reconnaissance that a small percentage of closure lines either fell between two sample stations or did not have an active station in the vicinity of the closure line. Whenever the topography permits (bays, harbors, rivers, etc.) the placement of a closure line should be determined by actual analytical data. It is understood that islands and certain peninsulas may be treated differently due to their configuration. Whenever such an instance occurs the growing area central file should note any justification for closure line placement when no sample data exists.

F. Corrective Actions taken by the State

The 2004 evaluation began in the Western Division Office located in Boothbay Harbor Maine. Following the close out meeting the week of May 3, 2004, some of the Annual Updates reviewed during the evaluation were reformatted and resubmitted to the FDA Regional Shellfish Specialist for review. The newly formatted Annual Updates included expanded sections which provided valuable information used to determine the level of effort and types of activities performed by the water quality specialist to ensure the ongoing proper classification of the shellfish harvesting areas.

G. Action Plans Requested

No Action Plans were requested as part of this evaluation.

H. Accomplishments

John Fendl, DMR Specialist I developed an Excel spreadsheet that can be used to calculate dilution zones around WWTPs or any other fecal effluent source. Instructions were provided on how to import that data into reports.

Mercuria Cumbo, Microbiologist II attended Male Specific Bacteriophage (MSB) training provided by USFDA. As a result of the training, equipment to perform the test was purchased and Mercuria has been testing samples of shellfish and waters at or near WWTP outfalls in eastern Maine. Performing this test provides a better indicator for evaluating the presence of viruses in shellfish growing areas further protecting public health in Maine.

Michelle Mason, Shellfish Program Coordinator, Tom Cotnoir, DMR Webmaster and Amy Fitzpatrick, Division Director completed a project which puts all bacterial and PSP closure legal notices and maps online.

The MDMR developed a distribution list of emails for certified dealers, aquaculturists and some harvesters to send them hotline updates and other pertinent information. Several requests have come in from certified dealers from other states to be added to the list in order to receive this information.

The Maine Bureau of Health and the DMR Public Health Division are exploring a potential tracking system that would link DMR data on PSP/red tide shellfish closures (temporal and spatial) with data that BOH can access on health related concerns (e.g., visits to emergency departments for GI symptoms).

GIS mapping of the shellfish wet storage sites was developed and field confirmation by the public health staff of the site locations undertaken prior to issuing permits.

I. New or Emerging Problems

Water quality monitoring and shellfish growing water classification activities have become significantly more complex compared to what they were just five years ago. Although technological advances have assisted our efforts, they have also increased the amount of time needed to use these techniques to their full potential. There are currently four water quality specialists and two scientist I's who attempt to manage approximately 3,500 miles (7,800 miles including the islands) of viable shellfish coastline. It was noted during the 2003 and again during the 2004 evaluations that the specialists are working diligently to comply with the minimum NSSP requirements. It is becoming increasingly evident that with new national and state requirements, new technologies and increasing pressure from the shellfish industry and the environmentally conscious general public that there is no room for the public health staff to increase their efforts. It is likely that within two years the program will fall into noncompliance simply because of staffing levels not allowing the public health staff to complete all of the required activities necessary to maintain a safe and effective shellfish sanitation program.

J. Technical Assistance and/or Training Requested by the State

The DMR would like to request that a Part II growing area course be developed to supplement the Sanitary Control of Shellfish Growing Area course. This should include more advanced data analysis and interpretation, hydrographic evaluations, the impacts of metals, organics, pesticides, and conditional area/marina/seasonal conditional areas. This is a repeat request originally found in the FY 2003 Growing Area Classification PEER.

K. Conclusions

The DMR Growing Area Classification Program currently meets the requirements of the NSSP Model Ordinance. Over the past year, the water quality staff have worked diligently to improve the state's approach to shellfish growing water classification. Due to budgetary constraints the staff members have had to become creative and even innovative in their attempts to comply with the NSSP requirements and their own state regulations. This year's evaluation focused on the Annual Updates. The reports reviewed were found to be in compliance with the minimum requirements of the MO. The Regional Shellfish Specialist did request additional detail be provided to some sections of some of the reports. The revised reports were submitted to FDA and have satisfied the request for more information. The improved Annual Updates will benefit the DMR during the preparation and writing of the Triennial Reports.

L. Summary of the State's response to FDA evaluation

The MDMR appreciates that Mr. Koufopoulos makes time available to work with staff on technical issues. We have worked hard in the past year to update the program to meet the requirements of the MO and are proud that our hard work has been recognized. We look forward to working with Mr. Koufopoulos in the coming year.